

CLIMATE AND CROP SERVICE.

By JAMES BERRY, Chief of Climate and Crop Service Division.

The following extracts relating to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective sections of the Climate and Crop Service. The name of the section director is given after each summary.

Rainfall is expressed in inches and temperature in degrees Fahrenheit.

Alabama.—The mean temperature was 77.8°, or 3.2° above normal; the highest was 100°, at Brewton on the 23th, and the lowest, 46°, at Scottsboro on the 18th. The average precipitation was 4.00, or 1.67 above normal; the greatest monthly amount, 8.55, occurred at Marion, and the least, 0.46, at Tuskegee.—*F. P. Chaffee.*

Arizona.—The mean temperature was 73.3°, or 3.2° below normal; the highest was 113°, at Blaisdell on the 5th, and the lowest, 19°, at Strawberry on the 28th. The average precipitation was 1.54, or 0.71 above normal; the greatest monthly amount, 6.54, occurred at Bisbee, while none fell at a number of stations.—*W. G. Burns.*

Arkansas.—The mean temperature was 78.0°, or 4.5° above normal; the highest was 104°, at Texarkana on the 17th, and the lowest, 49°, at Corning on the 17th and 30th and at Pond on the 30th. The average precipitation was 4.25, or 0.98 above normal; the greatest monthly amount, 9.17, occurred at Silversprings, and the least, 1.24, at Blanchard.—*E. B. Richards.*

California.—The mean temperature was 65.4°, or 3.1° below normal; the highest was 113°, at Salton on the 8th, and the lowest, 10°, at Bodie on the 17th and 25th. The average precipitation was 0.22, or 0.25 below normal; the greatest monthly amount, 3.43, occurred at Shasta, while none fell at 45 stations.—*G. H. Willson.*

Colorado.—The mean temperature was 57.8°, or 1.4° below normal; the highest was 104°, at Crook on the 9th, and the lowest, 9°, at Wagon-wheel Gap on the 21st. The average precipitation was 1.19, or 0.22 above normal; the greatest monthly amount, 5.15, occurred at Vilas, and the least, trace, at Buenavista, Perry Park, Salida, and Wallet.—*F. H. Brandenburg.*

Florida.—The mean temperature was 80.4°, or 1.5° above normal; the highest was 99°, at McClenny on the 24th, and the lowest, 56°, at Wausau on the 19th and at McClenny on the 27th. The average precipitation was 4.75, or 2.53 below normal; the greatest monthly amount, 10.50, occurred at Fort Meade, and the least, 0.80, at Carrabelle.—*A. J. Mitchell.*

Georgia.—The mean temperature was 77.3°, or 3.0° above normal; the highest was 103°, at Bellville on the 28th, and the lowest, 41°, at Dahlonga on the 18th. The average precipitation was 3.06, or 0.50 below normal; the greatest monthly amount, 7.11, occurred at Tallapoosa, and the least, 0.50, at Hephzibah.—*J. B. Marbury.*

Idaho.—The mean temperature was 55.6°, or 1.1° below normal; the highest was 101°, at Hagerman on the 3d, and the lowest, 8°, at Chesterfield on the 27th. The average precipitation was 0.82, or 0.04 below normal; the greatest monthly amount, 3.34, occurred at St. Maries, while none fell at American Falls.—*S. M. Blandford.*

Illinois.—The mean temperature was 69.4°, or 2.2° above normal; the highest was 102°, at Cobden on the 8th, and the lowest, 30°, at Martinton on the 18th. The average precipitation was 3.41, or 0.23 above normal; the greatest monthly amount, 5.75, occurred at Loami, and the least, 1.50, at Strawn.—*M. E. Blystone.*

Indiana.—The mean temperature was 70.3°, or 4.1° above normal; the highest was 102°, at Salem on the 8th, and the lowest, 31°, at Winamac on the 18th. The average precipitation was 2.06, or 0.91 below normal; the greatest monthly amount, 5.63, occurred at Washington, and the least, trace, at Valparaiso.—*C. F. R. Wapenhans.*

Iowa.—The mean temperature was 64.4°, or about normal; the highest was 99°, at Wapello on the 5th, and the lowest, 26°, at Sioux Center on the 29th. The average precipitation was 4.98, or about 2.00 above normal; the greatest monthly amount, 8.82, occurred at Spirit Lake, and the least, 2.48, at LeClaire.—*J. R. Sage, Director; G. M. Chapfel, Assistant.*

Kansas.—The mean temperature was 70.4°, or 1.1° above normal; the highest was 108°, at Altoona on the 6th, and the lowest, 29°, at Coolidge on the 29th. The average precipitation was 6.37, or 3.20 above normal; the greatest monthly amount, 14.35, occurred at Chanute, and the least, 0.78, at Wallace.—*T. B. Jennings.*

Kentucky.—The mean temperature was 74.6°, or 3.8° above normal; the highest was 102°, at Maysville on the 10th, and the lowest, 35°, at Marrowbone on the 18th. The average precipitation was 2.25, or 0.35 below normal; the greatest monthly amount, 6.85, occurred at Marrowbone, and the least, 0.60, at Scott.—*H. B. Hersey.*

Louisiana.—The mean temperature was 81.3°, or 4.3° above normal; the highest was 104°, at Minden on the 17th, and the lowest, 58°, at Como on the 17th. The average precipitation was 2.80, or 1.09 below

normal; the greatest monthly amount, 10.13, occurred at Port Eads, and the least, 0.20, at L'Argent.—*W. T. Blythe.*

Maryland and Delaware.—The mean temperature was 72.1°, or 4.6° above normal; the highest was 103°, at Hancock, Md., on the 11th, and the lowest, 29°, at Deepark, Md., on the 19th. The average precipitation was 3.70, or 0.30 above normal; the greatest monthly amount, 8.23, occurred at Rockhall, Md., and the least, 0.40, at Deepark, Md.—*Oliver L. Fassig.*

Michigan.—The mean temperature was 63.0°, or 3.1° above normal; the highest was 95°, at Traverse City on the 1st and at Mount Clemens on the 11th, and the lowest, 19°, at Humboldt on the 29th. The average precipitation was 3.23, or 0.08 below normal; the greatest monthly amount, 12.85, occurred at Calumet, and the least, 0.49, at Carsonville.—*O. F. Schneider.*

Minnesota.—The mean temperature was 58.2°, or about normal; the highest was 95°, at Milaca on the 1st, and the lowest, 24°, at Glencoe on the 15th and at Detroit and Milan on the 27th. The average precipitation was 6.55, or 3.57 above normal; the greatest monthly amount, 15.30, occurred at Hallock, and the least, 2.33, at Morris.—*T. S. Outram.*

Mississippi.—The mean temperature was 79.7°, or 5.2° above normal; the highest was 103°, at Brookhaven on the 17th, and the lowest, 50°, at Booneville on the 17th, and at Aberdeen, Batesville, and Corinth on the 18th. The average precipitation was 2.44, or 0.30 below normal; the greatest monthly amount, 8.51, occurred at Bay St. Louis, and the least, 0.63, at Agricultural College.—*W. S. Belden.*

Missouri.—The mean temperature was 70.9°, or 1.9° above normal; the highest was 100°, at Princeton on the 5th, and the lowest, 29°, at Bethany on the 17th. The average precipitation was 4.77, or 1.38 above normal; the greatest monthly amount, 10.57, occurred at Neosho, and the least, 1.18, at Edgehill.—*A. E. Hackett.*

Montana.—The mean temperature was 53.6°, or 1.8° below normal; the highest was 100°, at Ekalaka on the 3d, and the lowest, 8°, at Martinsdale on the 27th. The average precipitation was 1.60, or 0.42 above normal; the greatest monthly amount, 3.70, occurred at Columbia Falls, and the least, 0.16, at Chester.—*E. J. Glass.*

Nebraska.—The mean temperature was 64.5°, or 0.8° above normal; the highest was 105°, at Geneva on the 5th, and the lowest, 23°, at Kennedy on the 26th. The average precipitation was 2.66, or 0.82 above normal; the greatest monthly amount, 10.45, occurred at Genoa, while none fell at several stations in the southwestern portion.—*G. A. Loveland.*

Nevada.—The mean temperature was 56.1°, or 5.4° below normal; the highest was 99°, at Los Vegas on the 6th, and the lowest, 17°, at Elko on the 28th. The average precipitation was 0.30, or about 0.05 below normal; the greatest monthly amount, 1.35, occurred at Ely, while none fell at many stations.—*J. H. Smith.*

New England.—The mean temperature was 62.6°, or 2.3° above normal; the highest was 99°, at Berlin Mills, N. H., on the 15th, and the lowest, 25°, at Flagstaff, Me., on the 18th and at Carmel, Me., on the 19th. The average precipitation was 2.98, or 1.30 below normal; the greatest monthly amount, 5.81, occurred at Newton, N. H., and the least, 1.00, at Woodstock, Vt.—*J. W. Smith.*

New Jersey.—The mean temperature was 69.9°, or 3.6° above normal; the highest was 98°, at Bridgeton on the 6th, and the lowest, 32°, at Layton on the 19th. The average precipitation was 2.86, or 0.82 below normal; the greatest monthly amount, 7.37, occurred at Billingsport Lighthouse, and the least, 1.09, at Cape May Courthouse.—*E. W. McGann.*

New Mexico.—The mean temperature was 64.3°, or 0.4° below normal; the highest was 100°, at Roswell on the 15th, and the lowest, 25°, at Winsors on the 20th and 29th. The average precipitation was 3.12, or 1.35 above normal; the greatest monthly amount, 6.53, occurred at Roswell, and the least, 0.63, at Olio.—*R. M. Hardinge.*

New York.—The mean temperature was 64.0°, or 3.8° above normal; the highest was 99°, at Wedgewood on the 11th, and the lowest, 27°, at Axton and New Lisbon on the 19th. The average precipitation was 2.27, or 1.42 below normal; the greatest monthly amount, 4.90, occurred at Canton, and the least, 0.41, at Penn Yan.—*R. G. Allen.*

North Carolina.—The mean temperature was 74.9°, or 4.5° above normal; the highest was 101°, at Littleton on the 10th and at Southern Pines on the 12th, and the lowest, 38°, at Linville on the 19th. The average precipitation was 2.45, or 1.90 below normal; the greatest monthly amount, 6.74, occurred at Horse Cove, and the least, 0.73, at Charlotte.—*C. F. von Herrmann.*

North Dakota.—The mean temperature was 54.6°, or 2.8° below normal; the highest was 98°, at Fort Yates on the 1st, and the lowest, 17°, at Ashley on the 26th and at Fort Yates on the 27th. The average precipitation was 4.95, or 3.98 above normal; the greatest monthly amount, 9.72, occurred at Minto, and the least, 1.41, at Ashley.—*B. H. Bronson.*

Ohio.—The mean temperature was 69.3°, or 3.7° above normal; the highest was 100°, at Hanging Rock on the 8th, 9th, and 10th, and at

New Richmond on the 8th; the lowest was 33°, at Orangeville on the 19th. The average precipitation was 1.76, or 0.88 below normal; the greatest monthly amount, 4.12, occurred at Plattsburg, and the least, 0.28, at Cincinnati.—*J. Warren Smith.*

Oklahoma and Indian Territories.—The mean temperature was 75.7°, or 1.4° above normal; the highest was 105°, at Waukomis on the 6th, and the lowest, 35°, at Wood on the 29th. The average precipitation was 6.68, or 4.07 above normal; the greatest monthly amount, 11.86, occurred at Tahlequah, and the least, 2.13, at Webbers Falls.—*C. M. Strong.*

Oregon.—The mean temperature was 58.2°, or 1.3° below normal; the highest was 97°, at Buckhorn on the 2d, and the lowest, 13°, at Riverside on the 26th. The average precipitation was 1.83, or nearly normal; the greatest monthly amount, 4.89, occurred at Bullrun, and the least, 0.24, at Burns.—*A. B. Wollaber.*

Pennsylvania.—The mean temperature was 68.4°, or 4.7° above normal; the highest was 100°, at Irwin on the 1st, at Derry Station on the 3d, and at Athens on the 11th, and the lowest, 27°, at Lawrenceville on the 18th and at Dushore on the 19th. The average precipitation was 1.77, or 1.52 below normal; the greatest monthly amount, 6.90, occurred at Swarthmore, and the least, 0.48, at Lock No. 4.—*L. M. Dey.*

South Carolina.—The mean temperature was 77.1°, or 2.9° above normal; the highest was 100°, at Yorkville on the 12th, at Cheraw, Columbia, and Santuc on the 13th, and at Temperance on the 14th, and the lowest, 45°, at Holland and Walhalla on the 17th. The average precipitation was 2.83, or 1.30 below normal; the greatest monthly amount, 6.15, occurred at Trial, and the least, 1.08, at Temperance.—*J. W. Bauer.*

South Dakota.—The mean temperature was 60.6°, or about 2.0° below normal; the highest was 101°, at Cherry Creek on the 4th, and the lowest, 20°, at Ipswich on the 17th and 27th. The average precipitation was 3.32, or about 1.95 above normal; the greatest monthly amount, 10.50, occurred at Elk Point, and the least, 0.46, at Academy.—*S. W. Glenn.*

Tennessee.—The mean temperature was 75.1°, or 4.4° above normal; the highest was 98°, at Oakhill on the 7th and 8th and at Maryville on the 11th and 12th, and the lowest, 34°, at Erasmus on the 18th. The average precipitation was 3.42, or 0.61 above normal; the greatest monthly amount, 7.33, occurred at Dyersburg, and the least, 1.07, at Tullahoma.—*H. C. Bates.*

Texas.—The mean temperature, determined by comparison of 44 stations distributed throughout the State, was 3.8° above normal. Nearly normal conditions prevailed over the Panhandle, while over the other portions of the State there was a general excess, ranging from 1.0° to 5.2°, with the greatest over east Texas and the eastern portion of

north Texas. The highest was 105°, at Fort McIntosh on the 10th, and the lowest, 41°, at Amarillo on the 27th. The average precipitation, determined by comparison of 51 stations distributed throughout the State, was 2.60 above normal; there was a deficiency over the western portion of the coast district and the eastern portion of southwest Texas; nearly normal conditions prevailed along the extreme eastern border of the State, while over the other portions there was a general excess, ranging from about 1.00 to 12.71, with the greatest in the vicinity of Coleman; the greatest monthly amount, 15.82, occurred at Coleman, and the least, 0.05, at Fort McIntosh.—*I. M. Cline.*

Utah.—The mean temperature was 57.7°, or 4.1° below normal; the highest was 97°, at Hite on the 5th, and the lowest, 10°, at Loa on the 28th. The average precipitation was 1.28, or 0.42 above normal; the greatest monthly amount, 3.40, occurred at Tropic, and the least, 0.07, at Richfield.—*L. H. Murdoch.*

Virginia.—The mean temperature was 73.2°, or 3.8° above normal; the highest was 104°, at Buckingham and Fontella on the 9th, and the lowest, 37°, at Dale Enterprise on the 15th and at Meadowdale on the 19th. The average precipitation was 3.76, or 0.97 above normal; the greatest monthly amount, 8.05, occurred at Birdsnest, and the least, 1.20, at Columbia.—*E. A. Evans.*

Washington.—The mean temperature was 57.2°, or 0.5° below normal; the highest was 97°, at Lyle on the 12th, and the lowest, 20°, at Centerville on the 26th. The average precipitation was 1.52, or 0.34 below normal; the greatest monthly amount, 3.05, occurred at Granite Falls, and the least, 0.08, at Sprague.—*G. N. Salisbury.*

West Virginia.—The mean temperature was 71.1°, or 4.4° above normal; the highest was 100°, at Burlington on the 10th and at Romney on the 11th, and the lowest, 35°, at Dayton on the 18th and at Philippi on the 19th. The average precipitation was 1.92, or 1.03 below normal; the greatest monthly amount, 5.50, occurred at Princeton, and the least, 0.34, at New Martinsville.—*E. C. Vose.*

Wisconsin.—The mean temperature was 61.1°, or 1.2° above normal; the highest was 97°, at Prairie du Chien on the 6th, and the lowest, 28°, at Medford on the 17th, at Hillsboro on the 18th, and at Hayward and Knapp on the 27th. The average precipitation was 5.20, or 2.00 above normal; the greatest monthly amount, 9.46, occurred at Knapp, and the least, 1.51, at Oshkosh.—*W. M. Wilson.*

Wyoming.—The mean temperature was 54.7°, or 1.8° below normal; the highest was 98°, at Bittercreek on the 7th, and the lowest, 10°, at Daniel on the 18th. The average precipitation was 1.09, or 0.23 below normal; the greatest monthly amount, 2.19, occurred at Cheyenne, and the least, 0.20, at Bittercreek.—*W. S. Palmer.*

SPECIAL CONTRIBUTIONS.

THUNDERSTORMS AT ANTIGUA, W. I.

By W. H. ALEXANDER, Observer Weather Bureau, dated September 25, 1900.

Coincident with the passage of a weak cyclonic disturbance over or near the Leeward Islands during the last days of August, 1900, there occurred a number of thunderstorms. At St. Kitts thunderstorms occurred on the nights of August 30 and 31 and September 1. These storms, however, were very mild as compared with the one at Antigua on the night of August 30, which appears to have been of such unusual and marked severity as to merit special attention. By request Mr. Francis Watts, government analyst and agricultural chemist for the Leeward Islands, has kindly furnished the following data relative to the preceding meteorological conditions and attendant incidents.

The regular observations made at the government laboratory at St. Johns at 9 a. m. and 3 p. m., local time, were as follows, viz:

Time.	Pressure reduced to sea level.*	Temperature.					Wind.		Precipitation.	Clouds.	
		Dry.	Wet.	Dew-point.	Maximum.	Minimum.	Direction.	Velocity.		Amount.	Kind.
9 a. m.	29.960	81	78	75.0	86	77	ne.	2	0.00	7	ci. cu.
3 p. m.	29.876	85	80	75.9	n.	3	2.50	8	ci. cu.

*The original does not say reduced to standard gravity, but it is assumed that this correction, -0.06 inch, has been applied.—*C. A.*

Special readings of the barometer were made as follows,

viz: 11:50 a. m., 29.942; 12:50 p. m., 29.913; 2:05 p. m., 29.881; and 3:25 p. m., 29.840. Changes in the wind direction were noted as follows, viz: At noon, north-northwest; at 3 p. m., north; at 6 p. m., west; and at 8 p. m., southwest. The total wind movement was only 155 miles for the day, or an average of 6.5 miles per hour.

Mr. Watts writes:

During the whole period there was nothing more than a light breeze. About 10 p. m. a thunderstorm sprung up to the southwest and came up over the land, appearing to be most severe over the region southwest of St. Johns Harbor, and generally within a radius of 3 miles of St. Johns. It died away soon after midnight. While it lasted it was very severe; the lightning was brilliant and almost continuous, while the flashes were very quickly followed by loud peals of thunder. One house in town was struck, and the gaff of the flagstaff at Goat Hill signal station was shattered by the lightning. The following is the rainfall in different parts of the island:

Place.	Direction from St. Johns.	Inches.
Skerretts	East	2.50
Thibous Jarvis	Northeast	2.50
Langfords	North	2.60
Yaptons	West	2.00
Blubber Valley	South	1.80
The Ridge	Southeast	1.22
Elliot	East-southeast	1.45

The following account of this storm appeared in the Antigua Standard of September 1, 1900:

"A burnt child dreads the fire;" hence the alarm caused by the circulation on Thursday of an advisory message from the Weather Bureau intimating some atmospheric disturbance off Martinique. The lowering appearance of the heavens, anon tinged with a strange reddish yellow light, an ominous stillness and intense heat, and with a